SUPPORT FOR THE AMENDMENTS

This Amendment amends Claims 23 and 34. Support for the amendments is found in the specification and claims as originally filed. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 17-45 will be pending in this application. Claims 17 and 28 are independent.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

Conventionally, a fuel container has a multilayered structure that includes an inner layer, an outer layer and an intermediate layer with gasoline barrier properties (i.e., a barrier layer). The fuel container is provided with openings for mounting various components such as an inlet or outlet neck, a connector, and a cap. The components are preferably made of a barrier material for suppressing fuel permeation. However, the present inventors have discovered that when a component made of a barrier material such as EVOH is employed, the expected barrier properties are not obtained.

The present inventors were the first to discover that the fuel in the container vaporizes (permeates) from the portions where the components are attached. The specification at Fig. 5 shows such fuel permeation. Fig. 5 shows a fuel container made of a multilayered structure including a barrier layer 1 and thermoplastic resin layers 2 and 3, in which a component 6 is attached to an opening of its body. At this opening portion, fuel can evaporate and pass through the layers that are located on the outside with respect to the barrier layer 1 (in this case, the outer layer 3 made of a thermoplastic resin (B) and an adhesive layer 10) easily. See specification at page 11, line 15 to page 12, line 19.

The present inventors were the first to realize that the permeation of fuel through the portions where components are attached is a serious problem.

To address this problem, the fuel containers featured in independent Claims 17 and 28 each has a layered structure comprising at least a barrier layer made of a barrier resin (A), and an outer layer made of a thermoplastic resin (B) that is different from the barrier resin (A).

In independent Claim 17, the fuel container is provided with an opening through its body, wherein a cutting face of a layer at the opening is covered by a barrier member made of a barrier material (C), and wherein the layer covered by the barrier member is located on the outside with respect to the barrier layer. This feature is shown by Figs. 7 and 8.

In independent Claim 28, the fuel container is provided with an opening; a cut-out or a groove is provided at an outer surface of the fuel container around the opening; and the cut-out or the groove is covered or filled with a barrier member made of a barrier material (C). This feature is shown by Figs. 9-13.

According the present invention, fuel permeation at the peripheral portion of the opening (i.e., fuel permeation through the cutting face of the layer that is located on the outside with respect to the barrier resin (A)) is prevented, so that the fuel container of the present invention has high barrier properties with respect to the fuel.

Claims 17-43 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,547,096 ("Kleyn") in view of U.S. Patent No. 6,033,749 ("Hata"). In addition, Claims 44-45 are rejected under 35 U.S.C. § 103(a) over Kleyn in view of Hata.

Kleyn discloses an electroplated, polymeric fuel cell fabricated of inner and outer shells. The outer shell is an assembly of outer shell halves joined together along peripheral flanges. Kleyn at Abstract, lines 1-3. A layer of copper, a layer of nickel, and a layer of chrome are successively electroplated to either or both of the interior and exterior surfaces of the outer shell halves to prevent permeation of fuel through the shell. Kleyn at Abstract, lines

3-7; column 1, lines 53-61. Thus, Kleyn recognizes that fuel permeation occurs through the body of the fuel container, but fails to recognize that fuel permeation occurs at the peripheral portion of an opening through the fuel container (i.e., fuel permeation through the cutting face of the outer shell).

Fig. 2 of Kleyn is reproduced below.

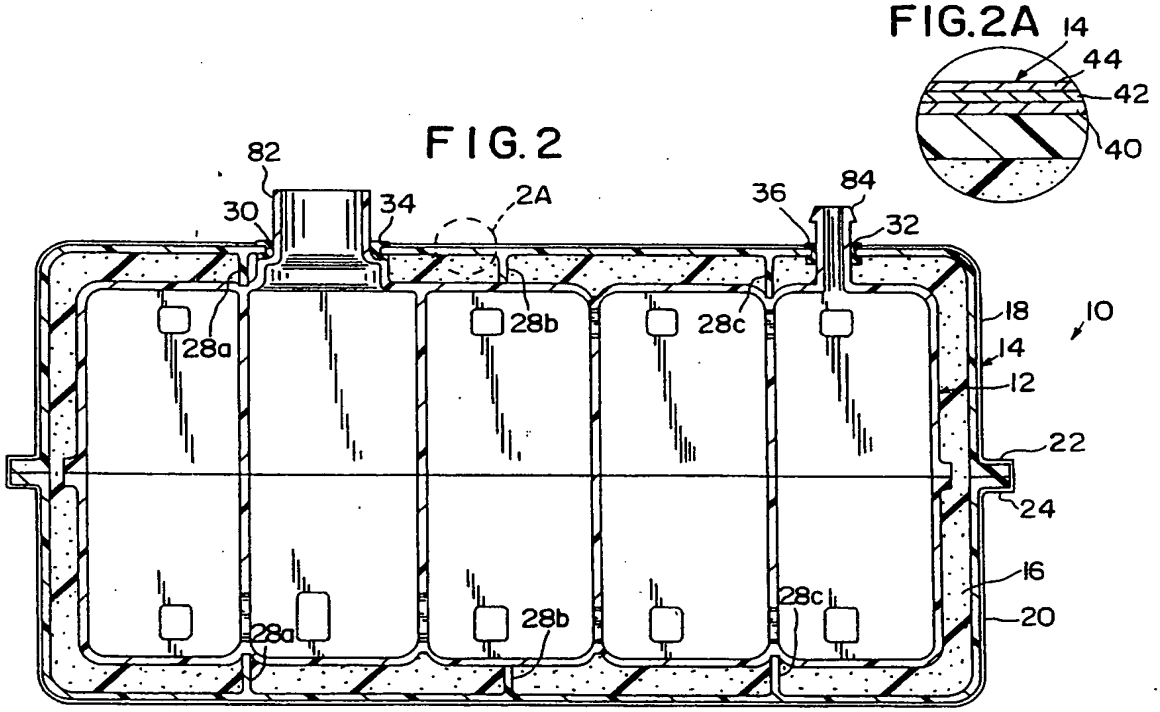

Fig. 2 of Kleyn shows inner shell 12 includes a filler neck 82 and an outlet neck 84 which pass through to apertures 30, 32 in outer shell 14. Enclosure gaskets 34, 36 are sufficiently compressed between outer shell 14 (outer shell half 18) and necks 82, 84 to provide a leak-tight seal. Kleyn at column 3, lines 1-12. The Final Rejection asserts that gaskets 34, 36 correspond to the barrier member of independent Claim 17. Final Rejection at page 2, section 2.

However, Kleyn fails to suggest the independent Claim 17 limitation that "the fuel container is provided with **an opening *through* its body**, wherein a cutting face of a layer ***at* the opening** is covered by a barrier member made of a barrier material (C)". The only openings through the body of Kleyn's fuel container are defined by the inner diameters of filler neck 82 and outlet neck 84 of inner shell 12. Apertures 30 and 32 in the outer shell 14 are not openings through the body of Kleyn's fuel container, merely openings through outer shell 14. Filler neck 82 and outlet neck 84 separate gaskets 34, 36 from the openings through the body of Kleyn's fuel container. Gaskets 34, 36 are spaced away from the openings through the body of Kleyn's fuel container, and do not cover "a cutting face of a layer ***at*** the opening" ***through*** the body of Kleyn's fuel container. Thus, Kleyn fails to suggest the independent Claim 17 limitation that "the fuel container is provided with **an opening *through* its body**, wherein a cutting face of a layer ***at* the opening** is covered by a barrier member made of a barrier material (C)".

Due to the structural differences between the fuel container of Claim 17 and that of Kleyn, the fuel container of Claim 17 has a number of advantages. For example, when a component (e.g., a lid) having gas barrier properties is mounted onto the opening portion of the structure shown in the specification at Fig. 7, a vaporized fuel permeation path is not formed around the opening portion. Thus, excellent gas barrier properties can be obtained. However, when such a lid is mounted on the Kleyn's filler neck 82 or outer neck 84, vaporized fuel can permeate through the filler neck 82 or outer neck 84 itself. Thus, the container does not have sufficient gas barrier properties.

Kleyn also fails to suggest the independent Claim 28 limitation that "the fuel container is provided with an opening, a cut-out or a groove is provided at an outer surface of the fuel container around the opening, and the cut-out or the groove is covered or filled with a barrier member made of a barrier material (C)".

The Final Rejection at page 3, lines 13-14, asserts "the openings 30 and 32 are cutouts which are covered by barrier members 34 and 36".

On the contrary, Kleyn's apertures 30 and 32 are not cut-outs. The term "cut-out" is shown as reference number 71 in the specification at Fig. 9A, reproduced below.

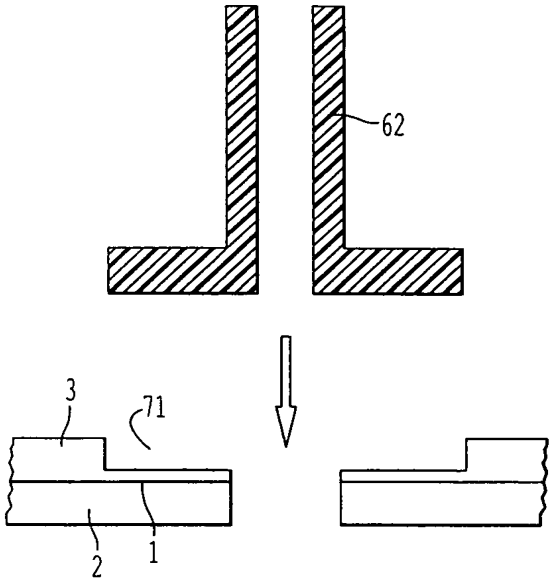

FIG. 9A

> As shown in Fig. 9a, a portion of the layered product around the opening provided in the body of the container, including the material at the opening, is cut away, forming a cutout 71. Specification at page 36, lines 20-23.

Because Kleyn's apertures 30 and 32 pass completely through outer wall 14, neither one of Kleyn's apertures 30 and 32 is a "cut-out".

For at least this reason, Kleyn fails to suggest the independent Claim 28 limitation that "the fuel container is provided with an opening, a cut-out or a groove is provided at an outer surface of the fuel container around the opening, and the cut-out or the groove is covered or filled with a barrier member made of a barrier material (C)".

Hata fails to remedy the deficiencies of Kleyn. The Final Rejection at page 2, section 2 (and Office Action dated July 17, 2006, at page 2, line 19) admits that "Kleyn does not disclose an (sic) interior barrier layer". The Final Rejection relies on Hata for disclosing this feature.

Because Kleyn in view of Hata fails to suggest all the limitations of independent Claims 17 and 28, the prior art rejection should be withdrawn.

Claims 23 and 34 are further patentably distinguishable over the cited prior art, because the cited prior art fails to suggest the limitations of Claims 23 and 34 that "a gasoline permeation amount (measured at 40°C and 65% RH) of the barrier resin (A) is at most 100g • 20μm/m^2 • day" and "a gasoline permeation amount (measured at 40°C and 65% RH) of the barrier material (C) is at most 400g • 20μm/m^2 • day".

As discussed above, Kleyn's gaskets 34, 36 provide a "leak-tight seal". This prevents passage of material between the inner shell and each of the gaskets, and between the outer shell and each of the gaskets. However Kleyn is silent about the passage (permeation) of fuel through the material forming the gaskets 34, 36.

The cited prior art fails to recognize that controlling the permeation properties of the barrier member (gasket) at a cutting face of a layer at an opening through a body of a fuel container is effective for controlling the amount of fuel escaping the fuel container.

> A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. MPEP 2144.05.II.B, page 2100-141, column 1.

Because the cited prior art fails to suggest the gasoline permeation characteristics of Claims 23 and 34, Claims 23 and 34 are further patentably distinguishable over the cited prior art.

Claims 44 and 45 are also further patentably distinguishable over the cited prior art. As discussed above, Kleyn's filler neck 82 and outlet neck 84 separate gaskets 34, 36 from the openings through the body of Kleyn's fuel container. Thus, gaskets 34, 36 are not exposed to the space in the openings. Thus, the cited prior art fails to suggest the Claim 44 limitations that "the barrier member is exposed to the opening space, or the barrier member and the barrier layer are exposed to the opening space" or the Claim 45 limitation that "the barrier layer is exposed to the opening space".

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything is further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

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